REMARKS

The Examiner is thanked for the informal telephone conference on April 27, 2004 regarding the present application and the cited references. This Amendment accompanies a Request for Continued Examination and a Petition for a Three-Month Extension of Time. Currently, claims 13-32 are pending in this application. This Amendment amends claims 13-15, 20, 22, 27-29, and 31. Additionally, this Amendment cancels claims 25 and 26 and adds new claims 33 and 34.

In the Final Office Action, dated November 17, 2003, claims 13 and 15-18 stand rejected under 35 U.S.C. § 102(b) for anticipation by WO97/49477 (hereinafter "the '477 reference"). Claim 19 stands rejected under 35 U.S.C. § 103(a) for obviousness over the '477 reference. Claims 14, 20, 21, and 25-32 stand rejected under 35 U.S.C. § 103(a) for obviousness over the '477 reference in view of U.S. Patent No. 4,187,089 to Hodgson. Finally, claims 22-24 stand rejected under 35 U.S.C. § 103(a) for obviousness over the '477 reference in view of WO93/5339 (hereinafter "the '339 reference"). In view of the foregoing amendments and following remarks, Applicants respectfully request reconsideration of the Examiner's rejection of claims 13-32 over the cited references.

Independent claim 13 is directed to a device for treating a gas/liquid mixture. The device includes a tube having an inlet opening (12) for the mixture and an outlet opening for the mixture located downstream. A rotating means (13) is arranged in the tube for setting the mixture into rotating movement. One or more outlet openings are arranged downstream relative to the rotating means (13) for allowing a separated part of the mixture to flow laterally out of the tube. A return/recycle conduit (16) is arranged centrally in an axial direction through the rotating means (13) for reintroducing the flow which has exited via the outlet openings. Amended independent claim 13 now states that the return conduit (16) includes a divergence element at an end part of the return conduit (16) for causing the reintroduced flow to diverge substantially laterally outward from the return conduit. Further, amended independent claim 13 includes an additional element set forth as an axial obstruction in the reintroduced flow path for inducing the reintroduced flow in the divergence element to diverge substantially laterally outward from the divergence element. Lastly, claim 13 states that the flow path of the mixture includes moving up the tube, out the one or more

outlet openings, and reintroducing the flow through the return conduit with the flow diverging substantially laterally outward from the return conduit. Independent claims 20, 22, and 27 are amended in a similar manner to independent claim 13, and the following discussion is equally applicable to independent claims 20, 22, and 27.

The '477 reference discloses a device for treating a gas/liquid mixture. The device includes an inlet (A) for in-feed of the mixture, a flow element (4), an outlet (8), and one or more feedback lines (B, D). The flow element (4) is located in a cylindrical body (2) defining the inlet (A), and includes one or more blades (5) for causing turbulence in the mixture. Outlet (8) is located downstream of the flow element (4) for out-flow of gas flow. Additionally, the one or more feedback lines (B, D) are connected to a channel (12) arranged centrally in the flow element (4) for discharge as a separated liquid into a part of the gas flow. An anti-creep flow interrupter (7) is provided on the flow element (4) at the end of channel (12).

In the November 17, 2003 Office Action, the Examiner further cited the Hodgson patent in connection with claims 14, 20, 21, and 25-32. The Hodgson patent is directed to a horizontal vapor-liquid separator. The separator (10) includes inlet tubing (18), a pipe (24) coaxially aligned with the inlet tubing (18), and a pair of pipes (36, 38) coaxially aligned with the pipe (24). A baffle (44) is coaxially aligned with pipe (38) and spaced from pipe (38) by axially-extending circumferentially spaced rib members (46). The cone apex of the baffle (44) is directed toward the end of the pipe (38). In operation, the baffle (44) is used to reverse the forward flow of the vapor/liquid mixture in pipes (24, 36, 38) and any liquid droplets impinging on the baffle (44) are coalesced and fall to the bottom of chamber (14). Once the flow stream is free of liquid, gas exits the chamber (14) through exhaust tubing (48). Liquid in the chamber (14) drains by gravity flow into liquid accumulation chamber (56).

As amended, independent claim 13 requires a divergent element at an end part of the return conduit for causing the reintroduced flow to diverge substantially laterally outward from the return conduit, and an axial obstruction in the reintroduced flow path for inducing the reintroduced flow in the divergence element to diverge substantially laterally outward from the divergence element. The '477 reference cited by the Examiner in connection with independent claim 13 fails to teach or suggest an axial obstruction in recycle

channel or conduit (12) shown in Fig. 1 of this reference. The creep interrupter (7) provided at the end of channel (12) does not form an axial obstruction of any kind, as now required by amended independent claim 13. Likewise, the '339 reference cited by the Examiner in connection with claims 22-24 fails to teach the specific limitations added to independent claim 13. Thus, Applicants respectfully submit that amended independent claim 13 distinguishes over the '477 and '339 references previously cited by the Examiner in this application.

Applicants further submit that amended independent claim 13 distinguishes over the Hodgson patent cited by the Examiner in connection with claims 14, 20, 21, and 25-32, whether considered alone or in combination with the '477 and '339 references. As discussed previously, the Hodgson patent discloses a horizontal vapor-liquid separator (10). The separator (10) extends along a longitudinal horizontal axis because the intended purpose of this device is to remove entrained liquid from a liquid/vapor flow using gravity. As the Examiner is aware, the present application is a vertically-oriented device for treating gas/liquid mixtures. More importantly, the baffle (44) disclosed by Hodgson is provided for the express purpose of reversing the gas/liquid flow in pipes (24, 36, 38) so that liquid droplets impinging on the baffle (44) are coalesced and fall to the bottom of chamber (14). Thus, the baffle (44) is not an axial obstruction in a vertically-moving reintroduced flow for inducing the reintroduced flow to diverge substantially laterally outward from a return conduit, as set forth in amended independent claim 13. The baffle (44) is adapted to reverse a flow stream and separate liquid from the flow stream using gravity. Accordingly, one skilled in the art would not look toward the horizontal baffle (44) disclosed by Hodgson when seeking to solve a problem associated with causing a vertically-moving gas/liquid mixture to rotate and diverge substantially laterally outward from a return conduit.

Additionally, one skilled in the art would not be motivated to combine the teachings of the Hodgson patent with the '477 and '339 references. As indicated, the conical baffle (44) in the horizontal separator (10) of the Hodgson patent is provided for the express purpose of reversing fluid flow direction and to allow liquid to coalesce on the baffle (44). Once the liquid is collected on the baffle (44), the liquid falls to the bottom of the chamber (14) under the force of gravity. Thus, the baffle (44) does not induce a reintroduced flow to diverge substantially laterally outward from pipe (38) as required by the limitations added to

independent claim 13 and other independent claims in this application. Because of the explicit teachings of the Hodgson patent, there would be no motivation to include the baffle (44) in the structure disclosed, for example, in the '477 reference. In fact, the explicit teachings of the Hodgson patent teaches away from such a substitution. The explicit teachings of the Hodgson patent require that the water droplets impinge on the baffle (44) and fall away therefrom under the force of gravity, whereas the claimed axial obstruction induces a vertically-moving reintroduced flow to diverge substantially laterally outward from a return conduit rather than simply fall away as is the case with the Hodgson patent. The horizontal separator (10) disclosed by the Hodgson patent is horizontally oriented for the express purpose of allowing the liquid to fall away from the baffle (44). To turn the horizontal separator (10) to vertical to arrive at the claimed invention would be contrary to the primary teachings of the Hodgson patent and would destroy the primary purpose of the baffle (44). Accordingly, based on the explicit teachings in the Hodgson patent, one skilled in the art would not apply the horizontal baffle (44) to the disclosure of the '477 or '339 references. For all the foregoing reasons, the Applicants respectfully submit that amended claims 13, 20, 22, and 27 distinguish over the cited references and are in condition for allowance. Reconsideration of the Examiner's rejections over the cited references are respectfully requested.

Claims 15-19 depend directly or indirectly from and add further limitations to independent claim 13, and are deemed to distinguish over the cited references for all the reasons discussed hereinabove in connection with the amended independent claims. Likewise, claim 21 depends from independent claim 20, claims 23 and 24 depend from independent claim 22, and claims 28-32 depend directly or indirectly from independent claim 27, and distinguish over the cited references for all the reasons discussed previously.

This Amendment includes new claims 33 and 34 which depend from claims 15 and 33, respectively. New claims 33 and 34 generally set forth that the conical element is disposed at the end of the return conduit.

In view of the foregoing, the Applicants respectfully request reconsideration of the Examiner's rejection of claims 13-32 over the cited references. Additionally, Applicants respectfully request allowance of claims 13-32 and new claims 33 and 34. The

Examiner is invited to contact the undersigned by telephone to discuss the foregoing claim amendments and the cited references after reviewing this Amendment.

Respectfully submitted,

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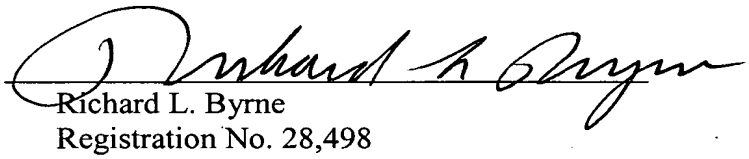
By 

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